VENTILATED SHOE WITH PROTECTION SHEET

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to a shoe, more particularly to a ventilated shoe which includes a ventilating opening formed in an upper and a flexible protection sheet disposed over the ventilating opening.

2. Description of the Related Art

It is known in the art to provide an upper of a shoe with perforations to permit ventilation and perspiration. Figure 1 shows a typical ventilated shoe which has a plurality of openings 2 formed by directly punching the material of an upper 1. In such a shoe, although fresh air can be introduced into the inside of the shoe or perspiration vapors can be expelled outward through the openings 2 directly without any protection, there is a drawback that foreign matters, such as dust, sand, and other contaminants, can invade the shoe through the openings 2. When the size of the openings 2 is reduced to alleviate the aforesaid problem, the effect of ventilating the shoe will be decreased. Moreover, providing the openings 2 in the upper 1 can affect adversely the outer appearance of the shoe.

SUMMARY OF THE INVENTION

An object of the present invention is to provide a ventilated shoe which not only possesses good ventilating property but also is effective in preventing foreign matters from invading the shoe directly.

Another object of the present invention is to provide a ventilated shoe with a protection sheet which can hide ventilating openings to enhance the outer appearance of the shoe while still permitting effective ventilation through the ventilating openings.

Accordingly, the present invention provide a shoe which comprises: an outsole; an upper connected to the outsole, the upper having an inner surface, an outer surface, and at least one first ventilating opening extending through the inner and outer surfaces; a flexible protection sheet disposed over the first ventilating opening and fixed to the upper; a second ventilating opening which is defined at least by the protection sheet and which is staggered with respect to the first ventilating opening, the second ventilating opening being cooperative with the first ventilating opening to ventilate the shoe; and a fastening unit to fix the protection sheet to the upper.

Preferably, the protection sheet has a marginal end and an interior part surrounded by the marginal end, wherein the fastening unit is attached solely to the marginal end so that the interior part is movable relative to the upper.

Alternatively, the protection sheet covers entirely the first ventilating opening, and the fastening unit is attached to a portion of the marginal end so that the marginal end has another portion which is movable relative to the upper, wherein the second ventilating opening is defined between said another portion of the marginal end and the

outer surface of the upper.

BRIEF DESCRIPTION OF THE DRAWINGS

Other features and advantages of the present invention will become apparent in the following detailed description of the preferred embodiments of the invention, with reference to the accompanying drawings, in which:

Figure. 1 shows a conventional ventilated shoe;

Figure 2 is a perspective view of the first preferred embodiment of a shoe according to the present invention;

Figure 3 is the same view as Figure 2 but with a first ventilating opening of the shoe being covered by a protection sheet;

Figure 4 is a sectional view taken along line 4-4 of Figure 3;

Figure 5 is a sectional view taken along line 5-5 of Figure 3;

Figure 6 is a perspective view of the second preferred embodiment of a shoe according to the present invention;

Figure 7 is a perspective view of the third preferred embodiment of a shoe according to the present invention;

Figure 8 is a perspective view of the fourth preferred embodiment of a shoe according to the present invention;

Figure 9 is a perspective view of the fifth preferred embodiment of a shoe according to the present invention;

Figure 10 is a perspective view of the sixth preferred embodiment of a shoe according to the present invention;

Figure 11 is a perspective view of the seventh preferred

embodiment of a shoe according to the present invention;

Figure 13 is a perspective view of the eighth preferred embodiment of a shoe according to the present invention;

Figure 14 is the same view as Figure 13 but with the first ventilating openings being covered by the protection sheet;

Figure 15 is a perspective view of the ninth preferred embodiment of a shoe according to the present invention;

Figure 16 is a perspective view of the tenth preferred embodiment of a shoe according to the present invention; and

Figure 17 is a fragmentary sectional view of the tenth preferred embodiment.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Before the present invention is described in greater detail, it should be noted that same reference numerals have been used to denote like elements throughout the specification.

Referring to Figs. 2 and 3, the first preferred embodiment of a ventilated shoe according to the present invention is shown at (A), and includes an upper 20 having a toe part 110, a heel part 120, an inner shank part 130 and an outer shank part 140. An outsole 10 is attached to the upper 20.

As shown in Figures 4 and 5, the upper 20 is made of a single layer sheet or a multi-layered sheet and has a single first ventilating opening 23 which extends through an inner surface 21 and an outer surface 22 of the upper

20. The first ventilating opening 23 is rectangular in this embodiment. When the upper 20 is made of a multi-layered sheet structure, it is preferable to have the upper 20 finished with hem stitches, hem embossments, or hem protecting strips.

According to the present invention, a flexible protection sheet 30 is disposed over the first ventilating opening 23 and fixed to the upper 20 in order to protect the first ventilating opening 23. The protection sheet may be made of a material selected from natural leather, plastic leather, and rubbery leather. Other materials suitable for making the protection sheet 30 are plastics, rubbers and composite materials. In addition, a combination of two or more of the aforesaid materials may be used to make the protection sheet 30. For example, when the protection sheet 30 is made from a combination of leather and an elastic fabric material, the protection sheet 30 not only can flutter resiliently when subjected to air currents but also is effective in providing protection.

As shown in Figure 2, the protection sheet 30 is rectangular and has a four-sided marginal end which surrounds an interior part of the protection sheet 30. In particular, the protection sheet 30 has an inner face 31 and an outer face 32. The four-sided marginal end of the protection sheet 30 includes a pair of opposite first sides 34 and a pair of second opposite sides 35 interconnecting the first sides 34. The first sides 34 are fixed directly

to the upper 20 by stitches 38 along two opposite edges which confine the first ventilating opening 23. Alternatively, the first sides 34 may be cemented to the upper 20 by using an adhesive or by a heat- sealing process. The second sides 35 are not stitched so that second ventilating openings or clearances 37 are formed between the second sides 35 of the protection sheet 30 and the outer surface 22 of the upper 20. In addition, the interior part of the protection sheet 30 surrounded by the first and second sides 34, 35 is also movable relative to the upper 20 since it is not stitched to the upper 20. While the protection sheet 30 is rectangular in this embodiment, it should not be limited thereto. The protection sheet may have any other suitable polygonal or geometrical shape.

When the user who wears the shoe (A) is walking or running, the shoe (A) is flexed or pressed intermittently due to the movements of the foot. As a result, the protection sheet 30 deforms or becomes bulged. The second ventilating openings 37 are therefore enlarged so that air and vapors inside the shoe (A) can flow easily outward through the first ventilating opening 23.

Due to the use of the first ventilating opening 23 having an enlarged size and the protection sheet 30 which covers the first ventilating opening 23, the shoe (A) not only provides efficient ventilation but also is effective to prevent dust, sandy substances and other contaminants from entering the inside of the shoe (A). Furthermore, the

protection sheet 30 which covers the first ventilating opening 23 can provide an improved appearance as compared with the prior art.

Referring to Figure 6, the second preferred embodiment of a ventilated shoe according to the present invention is shown to include an upper 20 which is provided with a plurality of first ventilating openings 231', 232' and 233' which are shaped and sized differently. While the shapes of the first ventilating openings 231', 232' and 233' are provided as shown in Figure 6, they may be varied to have any other suitable geometrical shapes.

Referring to Figure 7, the third preferred embodiment of a ventilated shoe according to the present invention is shown to include an upper 20 which is provided with a plurality of parallel first ventilating openings 231". The first ventilating openings 231" are formed as long and narrow cuts or slits which can be enlarged when the upper 20 flexes and deforms due to the movements of the wearer's foot.

Referring to Figure 8, the fourth preferred embodiment of a ventilated shoe according to the present invention is shown to include an upper 20 which is provided with a plurality of parallel first ventilating openings 240 and transverse first ventilating openings 241. The first ventilating openings 240, 241 are formed as long and narrow cuts or slits which can be enlarged when the upper 20 flexes and deforms due to the movements of the wearer's foot.

Referring to Figure 9, the fifth preferred embodiment

of a ventilated shoe according to the present invention is shown to include an upper 20′ which is formed by assembling a plurality of sheet parts 250′. A first ventilating opening 230′ is defined by two opposed indented edges 251′ of two adjacent sheet parts 250′. Alternatively, the first ventilating opening 230′ may be formed by more than two sheet parts 250′ which are adjacent to each other.

Figure 10 shows the sixth preferred embodiment of a ventilated shoe according to the present invention, which differs from the first preferred embodiment only in that the sixth embodiment additionally has a fastening unit which includes hook-and-loop fasteners (Velcro straps) 41 and 42. The fasteners 41 are provided on the upper 20 proximate to the first ventilating opening 23, and fasteners 42 are provided on the protection sheet 30 proximate to the first sides 34. The protection sheet 30 is therefore attached to the upper 20 through the interengagement of the fasteners 41 and 42.

Referring to Figures 11 and 12, in the seventh preferred embodiment of the present invention, the upper 20 is provided with two rectangular first ventilating openings 23, and the first sides 34 of the protection sheet 30 are attached to the upper 20 by means of studs 51.

Referring to Figures 13 and 14, in the eighth preferred embodiment of the present invention, the upper 20 is provided with two circular first ventilating openings 631. A protection sheet 300 is attached to the upper 20 in a manner

similar to that of the first embodiment. However, the protection sheet 300 has two circular second ventilating openings 350 which are staggered with respect to the first ventilating openings 631. While the protection sheet 300 is fixed to the upper 20 only at two first sides as shown, due to the presence of the second ventilating openings 350, the protection sheet 300 may be fixed to the upper 20 at three or all sides of the protection sheet 300.

Referring to Figure 15, the ninth preferred embodiment of the present invention is substantially the same as the eight embodiment except that the protection sheet 300 is attached to the upper 20 by means of fasteners 41, 42.

Referring to Figures 16 and 17, the tenth preferred embodiment of the present invention is substantially the same as the first embodiment except that the tenth embodiment additionally includes an air permeable sheet 70. The air permeable sheet 70 is provided between the outer surface 22 of the upper 20 and the protection sheet 30 and may be made of a material having screen openings, such as, a ventilating screen, a ventilating textile material, a perforated sheet, or a perforated and foamed sheeting material, etc. The air permeable sheet 70 may be attached to the upper 20 together with the protection sheet 30. Alternatively, the air permeable sheet 70 may be attached to an inner surface of the upper 20.

In all of the above mentioned preferred embodiments, although the first ventilating opening 23, 231', 232', 233'

240, 241, 230′, or 631, according to the present invention are provided in the inner shank part 130 (see Fig. 2) of the upper 20 or 20′, the present invention should not be limited thereto. The first ventilating openings 23, 231′, 232′, 233′ 240, 241, 230′, or 631, may also be provided in the toe part 110, the heel part 120 and/or the outer shank part 140 of the shoe (A).

While the present invention has been described in connection with what is considered the most practical and preferred embodiments, it is understood that this invention is not limited to the disclosed embodiments but is intended to cover various arrangements included within the spirit and scope of the broadest interpretations and equivalent arrangements.